DOCUMENT RESUME

ED 355 258 TM 019 599

AUTHOR Bontekoe, Jon F.
TITLE The ACT as a Predictor of College Success at Trinity Christian College.
PUB DATE 14 Dec 92
NOTE 21p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *College Entrance Examinations; College Freshmen; Correlation; Course Selection (Students); Females; *Grade Point Average; Higher Education; High Schools; High School Students; Males; Predictive Measurement; *Predictive Validity; Predictor Variables; Sex Differences; *Test Validity
IDENTIFIERS *American College Testing Program; *Trinity Christian College IL

ABSTRACT

This study assessed whether or not the American College Test (ACT) is a good predictor of college success for students at Trinity Christian College in Palos Heights (Illinois) for students entering as freshmen in the fall semesters of 1988, 1989, 1990, and 1991. The total population of 477 included 188 males and 289 females. ACT scores, high school grade point average (GPA), college GPA for the first two semesters, course credits attempted and earned, and other related data were taken from school records for 118 students in 1988, 117 students in 1989, 132 students in 1990, and 110 students in 1991. College GPA can be reasonably predicted from the ACT Composite range, and a breakdown of the six defined ACT ranges shows a distinct relationship between ACT success and success in college. This correlation is higher for females than for males. The correlation between high school GPA and college GPA is even higher than that between ACT scores and college GPA. High school GPA may be a more reliable predictor of college success than ACT composite scores. Twenty-six references are included. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED355258

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jon F. Bontekoe

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The ACT as a Predictor of College Success

At Trinity Christian College

Jon F. Bontekoe
Trinity Christian College
December 14, 1992

TM019599

BEST COPY AVAILABLE

The ACT, the American College Test (and its sister the SAT or Scholastic Aptitude Test) have been in use by colleges for over thirty years as an objective measure of the ability of graduating high school students to perform academic work at the college level. Here in the midwestern states taking the ACT has become a standard part of the high school Junior or Senior year experience, in the name of entry into college. Colleges use the scores as one of three major pieces of data, along wtih high school grade point average and rank in class, to help decide if an applicant meets entrance requirements and as a measure for awarding scholarship dollars.

The test is commonly referred to as the 'A.C.T.', the American College Test. In recent years the American College Testing Program set out to redefine how we refer to their test and in public presentations refer to it as a legitimate word, the 'Act', as in 'the second act' and as the 'ACT Assessment'. Similarly the SAT, also known as the Scholastic Aptitude Test, is being referred to verbally as the 'Sat'. Neither of these one word renaming drives has lead to any significant change in common usage. College Admissions officers and high school counselors call it the 'A.C.T.', naming the three distinct call letters. The ACT is published and graded by the American College Testing Program of Iowa City, Iowa. The SAT by the College Board in Princeton, New Jersey. They are competitors, and generally the country is divided by state in their usage, with the middle states using the ACT and the eastern and western state using the SAT. The prime purpose of the ACT is to predict college success. The end users of this service are high school Juniors and Seniors, and their parents, high school counselors, and

BEST COPY AVAILABLE

college admissions offices. For this reason the relationship of the ACT test scores to high school grade point average and college grade point average (GPA) is very important. Its relation to the high school GPA is important because the ACT, taken most often toward the end of the third year in high school, either validates or repudiates what has been accomplished in high school. Likewise the relation to future college GPA is important because the test claims to predict the degree of college success.

Since a major change in organization and test item selection carried out in 1989, scoring on the newly 'enhanced' ACT is expressed through subject sub-scores: math, English, reading, and science reasoning, and in one composite or combined score. It is interesting to note that the enhanced version set out to end racial, cultural, and gender bias in the test and to more closely address the needs of college decision makers. The test is still used today as it has been for years and the enhanced version only caused admissions offices to adjust their score scales to fit the needs of their colleges and the realities of a modified scoring system.

The scores theoretically can range from 1 to 36, although in practice almost no score below 12 actually arrives in a college admissions office, and the arrival for any score above 33 is often greeted with an admission department-wide celebration. In fact, through a careful calibration conducted by the ACT program, any score below an ACT of 7 is considered to be at the 1st percentile, that is 99% of all ACT test takers do better, and any score above 31 is considered to be in the 99th percentile, that is at most 1% of ACT test takers will do better. This scale, from 1 to 36, is the key for counseling by high school counselors and for decision making by students, parents, and college admissions offices. Any student with a score of 31 or better can

BEST COPY AVAILABLE

expect to be enticed to attend by any number of colleges, including prestige institutions that offer huge amounts of dollars with the name of academic scholarships. Students with a score of 28 or better can plan on being accepted into all but the most academically elite institutions. Students with a score of 19 or better are guaranteed entry into almost any standard liberal arts institution, while students with scores less than 18 may well have to 'settle' for a two-year community college or a less competitive state or private institution. An institution's average Freshman ACT score gets published in the college guides (like Peterson's Guide to Four Year Colleges and Universities (1992)) and Dean's tend to hold the admissions offices responsible for and demand a year-to-year increase in that average.

Review of the Literature

The use of the test has become widespread and its absence is often reason enough for a college to refuse to even consider an application for admission. Some criticize the use of the test because the college places too much emphasis on the work of one morning in a pressure-filled testing center (usually a high school gymnasium set up with tables), rather than on the four years of high school classroom work. College faculty at Trinity tend to defend the test as the only objective measure of a student's academic abilities because the subjective grading of teachers, the widely divergent academic expectations of high schools in widely different communities, and the inconsistency of an individual's work habits have been eliminated as interfering factors. College professors decry most the drop in national ACT scores over the past decade, and with vehemence college teachers object to the

BEST COPY AVAILABLE

acceptance into college of students with scores deemed less than desirable. This, in the eyes of many who teach at the college level, is the reason for the decline of the intellectual level in their classroom. Likewise these same defenders of the intellectual level on Trinity's campus demand, at least in the Admissions Committee deliberations of 1990-91, that students with ACT scores below a specific standard be refused admission to the college.

The crucial issue is whether the ACT is a legitimate criterion for making admissions and scholarship decisions at a particular institution. It is obvious to most users that a student with an ACT of 34 would be a near certain honor student at all of our nation's typical two-year, state funded community colleges. Likewise a student with an ACT of 16 probably could not survive three weeks in the rarified atmosphere of Harvard undergraduate school or the Massachusetts Institute of Technology. It takes a special kind of mind and a special kind of education at the high school level to get near perfect scores in math, English, reading, and science. Likewise students from high schools where the education is of a poor quality and where family educational values are limited, are far more likely to be rewarded with scores in the low teens, regardless of natural ability. But varying educational opportunities and a varying quality of family life are facts of life in the United States. Higher education cannot easily overcome the weaknesses. Rather, each example of higher education must decide if the ACT score is an accurate enough predictor of success at that institution. At what point on the scale of 1 to 36 must a student be, to survive with an adequate college GPA and percentage of courses earned from those attempted, to be deemed a success at the college level? Much of research on the ACT is not very supportive of it's use as a predictor. Rounds and Andersen (1985) in a research project dealing with the use of the

BEST COPY AVAILABLE

ACT by community colleges found that it was used more widely than any other instrument. They found a higher correlation between ACT scores and college success if the students completed an academic curriculum in high school rather than a non-academic curriculum. Baird (1969) found that for students completing two years of community college, the high school GPA was a far better correlational predictor than the ACT. Baird found only that the ACT, if used as an additional factor, added slightly to the accuracy of predicting grades. "The best predictor of college achievement is similar achievement in high school" (Baird, p. 425) Lach (1971), while Director of Admissions at Lake Land Community College in 1971, studied the use of tests including the ACT and compared their rate of predictive correlation while examining the socio-economic characteristics of students. Lach found that no test was a good predictor of GPA and that no placement tests provided a good correlation with college grades. Barney (1985) studied business students, the relationship between social class, ACT and SAT scores, and academic achievement. Barney was most interested in the issue of differing social classes and their relationships to scores and achievement. He found no relationship between social class and ACT scores or academic achievement. He also found no relationship between ACT scores and academic achievement in the first and second semesters of college, and concluded ACT scores are not significantly related to academic achievement.

Likewise, Hudson (1989) analyzed ACT scores, other placement tests, and academic performance in specific courses, and determined that ACT scores corresponded very well to scores on other placement tests, but that neither ACT test scores nor the scores from other tests "correlated to any appreciable extent with academic performance." (Hudson, p. 29) Aleamoni and Obler (1978)

BEST COPY AVAILABLE

conducted a study comparing the ACT and SAT against each other in predicting first semester GPA. Their findings place high school rank, expressed in percentile, as the best predictor, while the SAT total score was a marginally better predictor than the ACT composite score in their study.

Young and Berrett (1992), in an analysis of the use of high school transcripts to predict college performance, developed a complex scale of rating the actual courses taken and grades earned in high school. Their scale of average academic rigor (AVGRIGOR) was based on English, math, science, social studies, and foreign language courses and took into account the level of the courses (honors or regular), but worked only with 91 students from one high school to avoid differences that exist in the quality of education between high schools. They found that rank in class was the best predictor, their AVGRIGOR scale was second, and that both were significantly better than the SAT. Passons (1967) in a similar study in 1963-64 at Fresno State University, found that high school grades were the best predictor of college success, with the SAT Verbal score and the ACT Composite score being the next best predictors.

There are many extensive studies that support the use of ACT test scores as a valid predictor of college success. Rowan (1978) in a four year longitudinal study of two separate classes of students at Murray State University, found that the ACT had a strong correlation to college GPA. The correlation was as high as .56 in the first and second semesters of study and ranged over eight semesters in the mid .50 range, ending with .51 in the eighth semester. The correlation for the second class was .53 for the first semester and ranged down to .48 in the eighth semester. Rowan concluded that the ACT validly predicts college GPA at yearly intervals over a four-year

BEST COPY AVAILABLE

study and on-time graduation. He also noted that students with scores below 12 had an extremely low probability of graduation in eight semesters. Maxey and Ferguson (1976) did a comparison study of students who took the ACT as high school Juniors compared with those who took the ACT as Seniors and correlated that to college success. They found that Junior-year tested students tended to obtain better ACT test scores than Seniors, earned a higher college GPA, and that the GPA of ACT tested Juniors correlated equally or better than ACT tested Seniors. Their study covered grades of Freshmen at 28 colleges and found a wide range of positive correlation between ACT scores and GPA. Colleges had correlation values range as low as .41 and as high as .74. All but three of 28 colleges reported a correlation of .50 or better in the Maxey/Ferguson study. A study by Johnson and Napier (1987) of Black college students found that the correlational value of ACT scores to college grades was far higher (by .07) for female students than for male students. A study by Funches (1965) of freshmen at Jackson State College found a correlation coefficient of .59 between ACT composite scores and GPA at Jackson State. He found the ACT to be a reliable predictor of first year GPA with a positive degree of correlation. The following chart shows the relationship of ACT scores to first year grades of Freshmen at Jackson State:

Quartile	ACT Range	n	D	C	B	A
1st	1-6	87	55	32	0	0
2nd	7-12	207	64	137	6	0
3rd	13-18	70	3	47	20	0
4th	19-24	5	0	3	2	0

Garner (1981) conducted a study of Louisiana State University, Baton Rouge graduates. He found that the higher the ACT scores of graduates, the higher the academic quality of those graduates as expressed in their graduation GPA's. Sawyer and Maxey (1982) studied size of the Freshman class

BEST COPY AVAILABLE

and some other institutional characteristics in relation to ACT scores and college success. They found that the prediction accuracy was better for students enrolled in private colleges than for students enrolled at public colleges, and that using the ACT for grade prediction was more accurate for freshmen at four-year colleges than for freshmen in graduate level colleges.

Newman (1988), in a study for a doctoral dissertation at Northwestern State University of Louisiana, examined the use of the ACT as a predictor for the GPA of physical education majors in 30 colleges of the Southern District of the American Alliance of Health. He found that the ACT composite score and the ACT science score to be the best predictor. He also found a significant difference in the ACT scores as a function of gender, race, and athletic status.

Hendel (1991) studied a group of college students who were close to achieving graduation status by completing 85-110 hours of credits. Hendel offered a $25.00 reward for participation to a randomly selected group of 750 appropriate scudents from a total population of 1820. Of these, 118, actually appeared for a series of four tests: College Outcomes Measures Program (of ACT), ETS Academic Profile, Defining Issues Test (DIT), and their own test named the Sophomore Assessment Project Questionnaire. The results of the series of tests were correlated with college GPA, ACT composite scores, SAT scores, and Rank in Class in high school. Hendel found a high correlation of the four tests to ACT scores, SAT scores, and Rank in Class in high school, with an especially close correlation between the ACT composite score and the College Outcomes Measures Program (ACT) test, which seems logical since both these tests are produced by the same company and would seemingly be based on close philosophical viewpoints.

BEST COPY AVAILABLE

Summary

As a whole the research does not address the question of which grades will result from varying levels of ACT scores. It is obvious that each college differs in the results of its own particular group of students, but none of the research clearly and definitively identifies and numerically defines what a particular ACT score is most likely to produce as far as a student's college GPA. At best the report of Funches (1965) shows that the students with lower scores tended to get more lower grades of D and C and no higher scores of A and B. But the research is certainly not conclusive, considering that the ACT is such a widely accepted instrument. It seems necessary that each college, from time to time, evaluate its own use of the ACT as an instrument of decision making, and the only way to do so is to determine the database of students whose scores and other characteristics of uniqueness pull them together to be the Freshman classes of each particular institution. The way each institution interacts with their own students determines the eventual success rate and college GPA. It seems obvious that for Trinity Christian College to go on using the ACT, an internal research project of its own students must be conducted to measure whether the ACT is indeed a good predictor of college success.

The need of Trinity Christian College to deal with this issue are particularly pressing. As an institution, the mission of the college directs that the college work to become a multi-cultural institution that offers the opportunities of a traditional liberal arts institution to a significant number of Chicago metropolitan area residents from minority race communities.

BEST COPY AVAILABLE

The pressures to grow in size, the goal to serve students who do not come from traditional middle-class and white cultural and academic backgrounds, and the demands by professors that standards be maintained all come together, forcing the institution to face the issue of proper use of the ACT as a primary admissions criterion. For Trinity Christian College, at least, the study of the ACT as a predictor of college success is a study that is long overdue.

Therefore, the purpose of this study is to examine the ACT as a predictor of college success of Freshmen enrolling at Trinity Christian College

Procedures

Population/Sample:

The population for this study was made up of the four groups of students entering Trinity Christian College as new Freshmen during the Fall semesters of 1988, 1989, 1990, and 1991, and showing valid ACT composite scores in their database record. Trinity Christian College is a small, four-year liberal arts institution located in suburban Palos Heights, Illinois. During this period, a typical entering Freshman class ranged in size from 116 to 132. Most students take the ACT, although that requirement is waived if the student shows a comparable SAT score. The actual number of enrolled students with valid ACT scores in each year is:

For Fall 1988: 118
For Fall 1989: 117
For Fall 1990: 132
For Fall 1991: 110
Total: 477

The population was made up of 188 males and 289 females. The records of all 477 students were included in the population sample.

BEST COPY AVAILABLE

The college maintains a computerized database to which the researcher has access. Student records for the 477 were down-loaded, including the ACT scores, high school grade point average, a calculation of college grade point average earned during the first two semesters of enrollment, a calculation of course credits attempted and earned in the first two semesters of enrollment, and other related data that might have been significant to the project. A single group pretest post-test design was employed.

Since all the records were available in computer form, some statistical analysis in a PC environment using SPSS/PC, was conducted on the records, and some additional computer programs were written to further analyze the data. One part of the study was to devise a system to break ACT scores into subgroups of about 5 points and compare the records within those groups. The groups were divided as follows:

ACT of 0 to 10
ACT of 11 to 15
ACT of 16 to 20
ACT of 21 to 25
ACT of 26 to 30
ACT of 31 and above

The findings were tabulated in terms of means, standard deviations, and a Pearson Product Moment test was applied to the data to measure correlation values at the .05 level of confidence to determine if there was any statistically significant relationship between ACT Composite scores and College GPA.

Findings of the Study

The analysis of the data from the 477 sample students was carried out in a variety of ways. The first, and perhaps most relevant analysis resulted

BEST COPY AVAILABLE

when the students were sorted by their ACT Composite scores and were grouped into six ACT Composite score ranges. For each group by ACT Range, the count and average GPA after two semesters of college were then calculated. The Pearson product-moment correlations for pairs of variables was used to calculate correlation using SPSS/PC. Correlation values throughout the study were statistically significant at the .05 level, in fact tests run on all 477 students in the sample were significant at the .001 level. Table 1 summarizes the results of this analysis.

TABLE 1

ACT Composite score ranges, mean ACT Composite score for the group, count in each ACT Range, Mean College grade point average, Standard Deviation, Correlation value for the ACT Composite scores in comparison to College grade point average after two semesters of study.

ACT Range	Mean ACT C	Count	Mean College GPA	Standard Deviation	Correlation ACT C/GPA
1 = 6-10	8.6	10	1.74	.7947	.5908
2 = 11-15	13.4	68	1.96	.6502	.0094
3 = 16-20	18.1	167	2.20	.7408	.2058
4 = 21-25	22.8	160	2.88	.6470	.3192
5 = 26-30	27.2	69	3.38	.4679	.1836
6 = 31-35	31.7	3	3.50	.3000	.8660

Examination of the mean College GPA for each group by ACT Composite range shows that the grade point average can be reasonably predicted from the ACT Range, that is, there is a definite increase in each group's grade point average as the ACT Composite range increases. Even by eliminating the two groups where the number of students is too small for statistical significance, Group # 1 with ten students and Group # 6 with three students, it is obvious that there is a steady, significant, and marked increase in the GPA for each of the remaining groups.

BEST COPY AVAILABLE

A further breakdown of the six ACT ranges in comparison to the numbers of students earning grade point averages in the A, B, C, and D ranges, shows a direct relationship between success on the ACT and success in college. Table 2 shows the numbers of students earning specific grades in each ACT Range, similar to the Jackson State study by Funches (1965) summarized above, where grade counts are broken down by ACT quartile range.

TABLE 2

ACT Range, College grades, and the number of students earning those grades. Percent earning grades of 2.1 and above.

ACT RANGE	n	GPA 0.0-1.0	GPA 1.1-2.0	GPA 2.1-3.0	GPA 3.1-4.0	PERCENT 2.1-4.0
1 = 6-10	10	2	4	4	0	40%
2 = 11-15	58	6	34	25	3	41%
3 = 16-20	167	13	51	80	23	62%
4 = 21-25	160	2	17	68	73	88%
5 = 26-30	69	0	2	11	56	97%
6 = 30-35	3	0	0	0	3	100%
	---	---	---	---	---	
Total	477	23	108	188	158	

It is clear from Table 2 that there were far more students earning acceptable college grades above 2.0 for the students who entered Trinity with an ACT of 21 or higher. Students entering Trinity with an ACT below 21 were far more likely to earn less than a 2.1 GPA in the first two semesters of study, although, as Table 1 clearly shows, a large number of these did overcome their scores and succeed.

The primary goal of this study was to calculate the correlation of the ACT Composite score to College Grade Point Average after two semesters of study. The Pearson product-moment correlations for pairs of variables was used to calculate correlation using SPSS/PC. Table 3 shows the results of a statistical analysis of the whole sample of 477 students and some additional statistical findings.

BEST COPY AVAILABLE

TABLE 3

ACT Composite Scores, High School grade point average, mean ACT Composite Scores, mean High School grade point average, College Mean grade point average, correlation of ACT Composite score to College grade point average, and correlation of High School grade point average to College grade point average.

	Mean	Standard Deviation	Correlation to College GPA
ACT Composite	20.2	4.7884	.6124
ACT Range			.5874
High School GPA	2.71	.6342	.6970
College GPA	2.56	.8231	-

Table 3 shows clearly that there is a strong correlation between the ACT Composite Score and the College grade point average earned after two semesters of study. The correlation of .6124 is higher than the value of .59 found by Funches (1965) at Jackson State College. The correlation of the Trinity study is also higher than that found by Rowan (1978) in a similar study at Murray State University, which found correlation values no higher than .56. Overall the data leads to the acceptance of the operational hypothesis: there is a correlation between ACT scores of new Freshmen and the grade point average earned after two semesters in college.

In the process of collecting data and a statistical analysis of that data, it became obvious that other data and comparisons might be relevant to the study. Additional areas of comparison were readily available to this project through the use of SPSS/PC for data analysis. Additional statistical analysis was conducted on subgroups from the sample, including a breakdown of male and female students, and a breakdown of students by the four terms of initial enrollment, Fall 1988, Fall 1989, Fall 1990, and Fall 1991. The Pearson product-moment correlations for pairs of variables was used to

BEST COPY AVAILABLE

calculate correlation using SPSS/PC. Table 4 shows the results of this analysis.

TABLE 4

Male and Female count, ACT Composite mean, College grade point average mean, High School grade point average, correlation value for Act Composite scores and College grade point average, and correlation value for High School grade point average and College grade point average.

	Count	ACT-C Mean	Col-GPA Mean	HS-GPA Mean	---Correlations--- ACT/GPA	HS/COL GPA
Males	188	20.9	2.49	2.62	.5818	.6751
Females	289	19.8	2.61	2.77	.6568	.7074

Table 4 shows that Trinity attracted more female than male students, and that the females were better qualified than the male students. It also shows that for females there is a much higher correlation between the ACT Composite score and college GPA than for males, and that the overall correlation of ACT scores to college GPA is lower for males when treated as a separate group than for the group as a whole. Similar correlation differences are obvious when comparing the High School grade point average to College grade point average. The females demonstrate a higher correlation and the males demonstrate a lower correlation.

TABLE 5

Yearly breakdown of count, ACT Composite scores, College grade point average, high school grade point average, correlation between ACT Composite Score and College grade point average, and correlation between High School and College grade point average.

	Count	ACT-C Mean	Col-GPA Mean	HS-GPA Mean	---Correlations---- ACT/GPA	HS/COL-GPA
Fall 1988	118	18.9	2.51	2.64	.6209	.6731
Fall 1989	117	19.8	2.77	2.82	.6299	.7309
Fall 1990	132	21.1	2.44	2.68	.6481	.6756
Fall 1991	110	21.0	2.53	2.71	.7294	.7110

BEST COPY AVAILABLE

Table 5 strengthens the operational hypotheses, that there is a correlation between ACT Composite scores and College Grade Point Average. The overall correlation value of .6124 increases somewhat when each individual class is broken out. One obvious reason for this increase in correlation value for each class is the change in ACT scoring that resulted in the revision and enhancement of the ACT that occurred midway in the course of the years covered in this study. ACT scores in the mid-range did increase with the revision and that change can be seen by comparing each year's mean ACT Composite scores and the corresponding High School GPA. Scores went up in 1990 and 1991, while High School grade point average remained nearly the same or went down. The correlation between High School grade point average and College grade point average fluctuates when broken down by year and cannot be explained in this study.

Finally, it is obvious from the statistical analysis of the data that there is an even higher correlation between the High School grade point average and the College grade point average than between the ACT and College GPA. As Table 3 shows, the correlation value for HS GPA and College GPA is .6970, significantly higher than the correlation between the ACT Composite score and College GPA. Follow-up research should be conducted regarding this correlation. This higher correlation could possibly lead to the conclusion that High School grade point average be chosen as a more reliable predictor of college success than ACT Composite scores. This study might have resulted in more reliable and more consistent findings if the samples had been larger each year, if the ACT not been enhanced midway in the years covered by the study, and if the rank-in-class from high school had been available as an additional variable to be examined.

BEST COPY AVAILABLE

REFERENCE LIST

ACT Assessment, 1992-1993 User Handbook, The American College Testing Program, 1992.

Aleamoni, Lawrence M. and Linda Obler (1978) "ACT vs SAT in predicting first semester GPA", Educational and Psychological Measurement, v. 38, Summer 1978: 393-399.

ATP Guide 1991-92 for High Schools and Colleges, The College Board, 1991.

Baird, Leonard L. (1969) "Prediction of academic and nonacademic achievement in two-year colleges from the ACT Assessment", Educational and Psychological Measurement, v. 29, Summer 1969: 421-430.

Barney, Joseph A., Janet Fredericks, and Marcel Fredericks (1985) "Business students: relationship between social class, ACT scores, SAT scores and academic achievement", College Student Journal, v. 19, Fall 1985: 315-320.

Christopher, Chris Coleman (1990) "Predictors of success on the Scholastic Aptitude Test", a dissertation written in completion of a degree from East Texas State University under Keith Savage as advisor. An abstract in Dissertation Abstracts International, v 51A, N 1, July 1990.

Crawford, Forrest Cleon (1990) "Black Student Achievement at Weber State College and the use of ACT composite scores", a dissertation written in completion of a degree from Brigham Young University. An abstract in Dissertation Abstracts International, v 51-10A: 3283.

Dvorak, Jack (1986) "Comparison of college grades, ACT scores, and high school grades between those with and those without high school newspaper or yearbook experience", a paper presented at the annual meeting of the Association for Education in Journalism and Mass communication, Norman, Oklahama, August 1986. (ERIC Document Reproduction No. ED 269 787).

Funches, D.A. (1965) "A correlation between the ACT scores and the grade point average of freshmen at Jackson State College", College and University, v 40, Spring 1965: 324-326.

Garner, Walter L. Jr. (1981) "ACT profiles of Louisiana State University - Baton Rouge graduates and selected factors which affect them", Louisiana State University, Baton Rouge Bureau of Education Materials and Research, July 1981. (ERIC Document Reproduction No. ED 207 435).

BEST COPY AVAILABLE

Gee, Jerry Richard (1988) "An investigation of the utility of high school GPA, ACT test scores, and the ASSET test as a predictor if first semester college GPA in a two-year community college", a dissertation written in completion of a degree from Kansas State University. An abstract in Dissertation Abstracts International, v 49-07A: 1676.

Halpin, Gerald, Glennelle Halpin, and Barbara Hauf (1976) "Incremental validity of the ACT test battery for predicting success in a school of nursing over a 10-year period", Educational and Psychological Measurement, v36, Summer 1976: 433-437.

Hendel, Darwin D (1991) "Evidence of convergent and discriminant validity in three measures of college outcomes", Education and Psychological Measurement, v 51, Summer, 1991: 351-358.

Hudson, J. Blaine (1989) "An analysis of ACT scores, placement tests, and academic performance in reading, english, and mathematics courses", Louisville University Preparatory Division, July 21, 1989.

Humphreys, Loyd G, John Lery, and Thomas Tabor (1973) "Predictability of academic grades for students of high and low academic promise", Educational and Psychological Measurement, v 33, Summer 1973: 385-392.

Johnson, Darwin and Lee Napier (1987) "Locus of control and the ACT as predictors of success for Black college students", a paper presented at the annual meeting of the Med-South Educational Research Association in Mobile, Alabama, November 12, 1987.

Lach, Ivan J (1971) The predictive ability of entrance testing of a survey of socio-economic characteristics at Lake Land College, (ERIC Document Reproduction No. ED 058 866).

Maxey, E. James, and Richard L. Ferguson (1976) "Differential validity of the ACT assessment for predicting college averages of high school students tested as juniors and seniors", Journal of College Student Personnel, v 17, May 1976: 220-226.

Merante, Joseph A. (1983) "Predicting student success in college: What does the research say"", NAASP Bulletin, v 67, n 460, February 1983: 41-46.

Newman, Gene Lewis (1988) "ACT scores as predictors of academic achievement in physical education in four-year state supported institutions of the Southern District", a dissertation written in completion of a degree from Northwestern State University at Louisiana. An abstract in Dissertation Abstracts International, v 49/06A: 1386.

Passons, William R (1967) "Predictive validities of ACT, SAT, and high school grades for first semester GPA and freshman courses", Educational and Psychological Measurement, v 27, Winter 1967: 1143-1144.

BEST COPY AVAILABLE

Rounds, J. C., and D. Andersen (1985) "Assessment for entrance to community college: research studies of three major standardized tests", Journal of Research and Development in Education, v 18, Winter 1985: 54-58.

Rowan, Robert W. (1978) "Predictive value of the ACT at Murray State University over a four year college program", Measurement and Evaluation in Guidance, v 11, October 1978: 143-9.

Sawyer, R. and E. J. Maxey (1982) "The relationship between college freshman class size and other institutional characteristics and the accuracy of freshman grade predictions", Research and Development Division, American College Testing Program, January 1982. (ERIC Document Reproduction No. ED 213 385).

Woodard, Peggy G., Annie L. Lawrence, and David D. Suddick (1990) "A revalidation of the use of the American College Testing proficiency examination program for admission to the masters degree of nursing program", Educational and Psychological Measurement, v 50, Autumn 1990: 643-545.

Young, John W., Clare A. Berrett (1992) "Analyzing high school transcripts to improve prediction of college performance", The Journal of College Admission, v 137, Fall 1992: 25-29.

BEST COPY AVAILABLE